

U.S. Patent Appl. No. 09/697,465
Response to Office Action mailed 8/25/2003

Docket No. 5785-23

LISTING OF CLAIMS

1 1.-12. (Previously Withdrawn)

1 13.-18.(Previously Cancelled)

1 19.-20.(Previously Withdrawn)

1 21. (Currently amended) A method of forming high strength panels suitable for use in
2 applications requiring a capability to withstand point compression loading without
3 deformation, comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 fixing a foam core between at least a portion of said fabric layers to form said panel;
7 ~~selectively positioning at least one rigid point compressive load bearing member~~
8 ~~between portions of said foam core along areas of anticipated point compression loading in~~
9 ~~a location to prevent compression of said foam core when a point compressive load is~~
10 ~~applied to said point compressive load bearing members;~~
11 defining in at least one of said opposing panel surfaces an elongated channel having
12 a cross-sectional profile;
13 forming a rigid point compressive load bearing member having a structural foam
14 core, an outer fabric layer including fabric flaps and said cross-sectional profile of said
15 elongated channel;
16 applying resin to said flaps and mating surfaces of the rigid point compressive load
17 bearing member and said elongated channel;
18 positioning said rigid point compressive load bearing member in said elongated
19 channel after said applying step; and
20 allowing said resin to cure ~~selecting at least one of a structure and a material of said~~
21 ~~rigid point compressive load bearing member so that it has~~ to provide along a length of said
22 rigid point compressive load bearing member a greater resistance to point compression as
23 compared to a remaining portion of said panel exclusive of said rigid point compressive load
24 bearing member.

{00000118;}

1 22. (Canceled)

1 23. (Previously presented) The method according to claim 21 further comprising the step
2 of forming at a periphery of said opposing panel surfaces a plurality of fabric tabs attached
3 to at least one of said first and second fabric layers.

1 24. (Previously presented) The method according to claim 21 further comprising the step
2 of laminating said panel into a composite boat hull to form a transom.

1 25. (Canceled)

1 26. (Canceled)

1 27. (Canceled)

1 28. (Canceled)

1 29. (Canceled)

2

1 30. (Currently amended) The method according to claim ~~25~~ 21 further comprising the
2 step of injecting a curable structural foam in a space between said opposing panel surfaces
3 while constraining the first and second fabric layers from movement so as to form said foam
4 core.

1 31. (Previously presented) The method according to claim 30, further comprising the
2 step of constraining said foam under a molding pressure selected to cause said foam to
3 penetrate only partially through an inner thickness of said first and second fabric layers so
4 as to leave an outer exposed portion of said fabric layer free of said structural foam.

1 32. (Previously presented) The method according to claim 30 further comprising the step
2 of attaching a non-woven fabric layer to a reinforcing fabric layer to form each of said first
3 and second fabric layers

1 33. (Previously presented) The method according to claim 32 further comprising the step
2 of arranging said first and second fabric layers so that said reinforcing fabric layer forms an
3 outer panel surface and said non-woven fabric layer forms an inner panel surface.

1 34. (Previously presented) The method of claim 32, further comprising the step of
2 selecting said reinforcing fabric layer from the group consisting of fiberglass, carbon fibers,
3 aramid fibers, linear polyurethane fibers, polypropylene fibers, and polyester.

1 35. (Previously presented) The method of claim 32, further comprising the step of
2 selecting the non-woven fabric layer from the group consisting of polyester staple mat, glass
3 fiber mat, a continuous thermoplastic fiber which is needle punched to form a felt-like fabric,
4 or other organic and inorganic fiber mats and fabrics.

1 36. (Canceled)

1 37. (Canceled)

1 38. (Canceled)

1 39. (Canceled)

1 40. (Previously presented) A method for manufacturing a composite boat transom
2 comprising the steps of:
3 positioning a first fabric layer spaced from a second fabric layer to form opposing
4 transom surfaces;
5 positioning elongated rigid channel members between said first and second fabric
6 layers aligned with locations corresponding to areas of anticipated point compressive
7 loading; and
8 injecting a foam core between said first and second fabric layers.

1 41. (Previously presented) The method according to claim 40 further comprising the step
2 of aligning said elongated rigid channel members with an anticipated location of a bolt for an
3 outboard motor bracket.

1 42. (Previously presented) The method according to claim 41 further comprising the step
2 of selecting said elongated rigid channel members to be formed of metal.

1 43. (Previously presented) The method according to claim 40 further comprising the step
2 of injecting said foam core within said rigid channel members.

1 44. (Previously presented) The method according to claim 40 further comprising the step
2 of forming said first and second fabric layers to include fabric flaps at a periphery of said
3 composite transom.

1 45. (Previously presented) The method according to claim 44 further comprising the step
2 of positioning said composite transom to form part of a composite boat hull and laminating
3 said exposed reinforcing fabric flaps into said composite boat hull.

1 46. (Previously presented) The method according to claim 40 wherein said injecting step
2 further comprises causing said foam core to penetrate at least partially into interstices of
3 said fabric layer to bind said foam core to said fabric layers.

4
5 47. (Previously presented) A method for manufacturing a composite boat transom
6 comprising the steps of:

7 positioning a first fabric layer spaced from a second fabric layer to form opposing
8 transom surfaces;

9 positioning elongated rigid channel members between said first and second fabric
10 layers aligned with locations corresponding to areas of anticipated point compressive
11 loading associated with an outboard motor bracket;

12 injecting a foam core between said first and second fabric layers; and

13 causing said foam core to penetrate at least partially into interstices of said fabric
14 layers to bind said foam core to said fabric layers

1 48. (Previously presented) The method according to claim 47 further comprising the step
2 of selecting said elongated rigid channel members to be formed of metal.

49. (Previously presented) The method according to claim 48 further comprising the step of injecting said foam core within said rigid channel members.

50. (Previously presented) The method according to claim 47 further comprising the step of forming said first and second fabric layers to include fabric flaps at a periphery of said composite transom.

51. (Previously presented) A method of forming high strength panels suitable for use in applications requiring a capability to withstand point compression loading without deformation, comprising the steps of:

- positioning a first fabric layer spaced from a second fabric layer to form opposing panel surfaces;
- fixing a foam core between at least a portion of said fabric layers to form said panel;
- positioning at least one rigid point compressive load bearing member between portions of said foam core along areas of anticipated point compression loading in a location to prevent compression of said foam core when a point compressive load is applied to said point compressive load bearing members; and
- selecting said point compressive load bearing member to be an elongated channel formed of a material selected from the group consisting of steel, aluminum and a metal alloy.

52. (Previously presented) A method of forming high strength panels suitable for use in applications requiring a capability to withstand point compression loading without deformation, comprising the steps of:

- positioning a first fabric layer spaced from a second fabric layer to form opposing panel surfaces;
- fixing a foam core between at least a portion of said fabric layers to form said panel;
- positioning at least one rigid point compressive load bearing member between portions of said foam core along areas of anticipated point compression loading in a location to prevent compression of said foam core when a point compressive load is applied to said point compressive load bearing members; and
- forming at a periphery of said opposing panel surfaces a plurality of fabric tabs attached to at least one of said first and second fabric layers.

1 53. (Previously presented) A method of forming high strength panels suitable for use in
2 applications requiring a capability to withstand point compression loading without
3 deformation, comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 fixing a foam core between at least a portion of said fabric layers to form said panel;
7 positioning at least one rigid point compressive load bearing member between
8 portions of said foam core along areas of anticipated point compression loading in a
9 location to prevent compression of said foam core when a point compressive load is applied
10 to said point compressive load bearing members; and
11 laminating said panel into a composite boat hull to form a transom.

1 54. (Previously presented) A method of forming high strength panels suitable for use in
2 applications requiring a capability to withstand point compression loading without
3 deformation, comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 positioning a rigid point compressive load bearing member between said first and
7 second fabric layers along areas of anticipated point compression loading; and
8 injecting a foam core between at least a portion of said first and second fabric layers
9 to form said panel, wherein said rigid point compressive load bearing member prevents
10 compression of said foam core when a point compressive load is applied to said point
11 compressive load bearing member; and
12 injecting a foam core into said rigid point compressive load bearing member.

1 55. (Previously presented) A method of forming high strength panels suitable for use in
2 applications requiring a capability to withstand point compression loading without
3 deformation, comprising the steps of:
4 positioning a first fabric layer spaced from a second fabric layer to form opposing
5 panel surfaces;
6 positioning a rigid point compressive load bearing member between said first and
7 second fabric layers along areas of anticipated point compression loading; and

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8 injecting a foam core between at least a portion of said first and second fabric layers
9 to form said panel, wherein said rigid point compressive load bearing member prevents
10 compression of said foam core when a point compressive load is applied to said point
11 compressive load bearing member; and
12 selecting said rigid point compressive load bearing member to be an elongated
13 channel formed of a material selected from the group consisting of steel, aluminum and a
14 metal alloy.